



सत्यमेव जयते

GOVERNMENT OF INDIA
TARIFF COMMISSION

REPORT
ON
**The Revision of Selling Prices of
Ferro-Silicon Manufactured by the
Mysore Iron and Steel Works,
Bhadravati**

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BOMBAY 1961

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of Ferro-Silicon Manufactured by the
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Bhadravati 1961.**



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REPORT (1961) ON THE REVISION OF SELLING PRICES OF FERRO-SILICON

Errata Slip

PAGE

- 13 Para 12.2.3.3 line 13—
After "in the case of" the word "the" should be inserted.
- 13 Para 12.2.3.6 line 4—
After the word "year" the word "at" should be inserted.
- 16 The columns of the statement should be read as "1.2.2.3.3." instead of
"1 2 3 4 5".
- 22 Line 29—
For— "enclosed f" read "enclosed for".
- 23 In the statement showing the power consumption—line 8 in the first
column—
For "1500 power consumption admitted 11/690 per ton KVA.
Furnace. $168 \times 11690 = I\ 19,63,920$ units"
read "Power consumption admitted : 11690 per ton.
1500 KVA
Furnace $168 \times 11690 = I\ 19,63,920$ units"
- 23 In the first column in line 17—
The expression "9000 KVA" should be deleted and it should be inserted
before the word "furnace" in line 18.
- 26 Under "Govt. Depts." Sl. No. 13—
For "Ltd. Col." read "Lt. Col."

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GOVERNMENT OF INDIA
MINISTRY OF STEEL, MINES & FUEL
DEPARTMENT OF IRON & STEEL

New Delhi, 4th April, 1961.

RESOLUTION

PS-30(11)/59.—In Resolution No. 17(1)-T.B./53, dated the 28th November, 1953 the Government of India accepted the recommendation of the Tariff Commission for fixing the ceiling prices of ferro-silicon of different grades, F.O.R. Bhadravati, and for discontinuance of protection to the ferro-silicon industry from 1-1-1954. During 1959, the Mysore Iron & Steel Works, Bhadravati, represented to the Government of India that its manufacturing cost of ferro-silicon had increased, particularly due to enhancement of the rate charged for power by the Mysore State Electricity Board and requested that the present ceiling prices be suitably raised. The Government of India felt that a fresh examination of the cost of production should be undertaken and accordingly requested the Tariff Commission to examine the claim of the Mysore Iron & Steel Works for higher prices taking into account all factors affecting the prices and to report on the ceiling prices to be fixed for the various grades of ferro-silicon produced by the Works.

2. The Commission's principal recommendations are :

- (1) That ceiling prices for different grades of ferro-silicon produced by the Mysore Iron & Steel Works should be fixed, F. O. R. Bhadravati as specified below :—

Grades	Price for the period 1-7-59 to 31-3-60		Price from 1-4-1960	
	Rs. per long ton.	Rs. per metric ton	Rs. per long ton	Rs. per metric ton
1	2	3	4	5
75-80%	984	968	1040	1024
70-75%	907	893	958	943
60-70%	733	721	775	763
50-60%	608	598	643	633

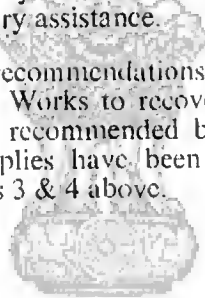
- (2) That the Works be permitted to recover from its customers the difference between the prices given in column 2 of the above table and the prices (including deposits of Rs. 81.00

(ii)

per ton) at which supplies were made during the period from 1st July, 1959 to 31st March, 1960. As regards supplies from 1st April, 1960 the Works should recover the difference between the prices in column 3 of the table and the prices (including deposits of Rs. 81.00 per ton) at which supplies have already been made. For supplies in the future, the prices indicated in column 3 will be applicable till next review takes place in early 1963.

- (3) That the attention of State Electricity Board should be drawn to the observations made to their recommendations made in paragraph 18.3.2. of its Report (1960) on Aluminium Industry and that they should be requested to give sympathetic consideration to requests from the ferro-silicon industry for bulk supply of power at cheap rates.
- (4) That Mysore Iron & Steel Works should take urgent steps to locate indigenous sources of Supply of coke with low ash content and low ash fusion point and explore the possibility of using it for a part of its requirements, and that in this endeavour the Ministry of Steel, Mines & Fuel should afford the Works all necessary assistance.

3. Government accepts recommendations 1 & 2 above, and permits the Mysore Iron & Steel Works to recover from its customers the difference between the prices recommended by the Tariff Commission and the prices at which supplies have been made. Government also takes note of recommendations 3 & 4 above.



(K. S. RAGHUPATHI)

Deputy Secretary to the Government of India.

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APPENDIX.

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REPORT ON THE REVISION OF SELLING PRICES OF FERRO-SILICON MANUFACTURED BY THE MYSORE IRON AND STEEL WORKS, BHADRAVATI

1. Prices of ferro-silicon have been regulated from time to time since 31st December 1949 by executive instructions. Ceiling prices were fixed for the first time by Government on the recommendations of the late Tariff Board in its Report (1949) on the continuance of protection to the ferro-silicon industry. The ceiling prices fixed were at the levels of fair selling prices estimated by the Board. In its Report (1953) on the continuance of protection to the industry the Tariff Commission reviewed the price structure and on its recommendation ceiling prices of ferro-silicon of different grades (F. O. R. Bhadravati) were, with effect from 28th November 1953, fixed as follows :—

Grade	Rs. per long ton
75-80%	
Lump	890
Powder	845
70-75%	
Lump	820
Powder	779
60-70%	
Lump	663
Powder	630
45-50%	
Lump	466
Powder	443

As the demand for ferro-silicon in the country is considerably in excess of internal production the above prices virtually became the actual selling prices of indigenous ferro-silicon. These prices were maintained by Mysore Iron and Steel Works till 1st July 1959.

2. In August 1959 Mysore Iron and Steel Works, which is the only producer of ferro-silicon in the country, represented to the Government of India that its manufacturing costs have increased by Rs. 81 per long ton due to the enhancement of power rate by Mysore State Electricity Board and requested that the present prices should be suitably revised. It also informed Government that its customers had been advised, in anticipation of Government sanction, that it would be billing them at the higher rates proposed with effect from 1st July

Present inquiry

1959. The representation was carefully considered by Government and they decided that a fresh examination of the cost of production was necessary. They accordingly requested the Tariff Commission under section 12(d) of the Tariff Commission Act, 1951 to examine the claim of Mysore Iron and Steel Works for higher prices taking into account all factors affecting the prices, including the higher rate for power and to report on the ceiling prices to be fixed for the various grades of ferro-silicon produced by Mysore Iron and Steel Works, Bhadravati. We were also asked that while recommending the ceiling prices we should take into account the surcharge of Rs. 81 per ton of ferro-silicon of all grades which Mysore Iron and Steel Works has been obtaining as deposit from its customers with effect from 1st July 1959. A copy of Government's letter dated 9th January 1960 referring the case to us is given in Appendix I. The present inquiry into the costs of production of the various grades of ferro-silicon was undertaken by us in pursuance of this reference.

3.1. A special questionnaire was issued on 5th July 1960 to Mysore Iron and Steel Works, Bhadravati. At about the same time questionnaires were also issued to consumers of ferro-silicon. The Development Wing and the Iron and Steel Controller were requested to furnish information on certain aspects of the industry. Data relating to c.i.f. prices and landed costs of imported ferro-silicon as well as quantities imported were called for from the State Trading Corporation of India (Private) Limited, New Delhi. A list of those to whom questionnaires and letters were issued and from whom replies or memoranda were received is given in Appendix II.

3.2. Shri J. N. Dutta, Member, visited Mysore Iron and Steel Works, Bhadravati from 16th to 19th November 1960. Shri U. R. Padmanabhan, Cost Accounts Officer, visited the factory from 19th to 24th November 1960 and examined the cost of production of ferro-silicon.

3.3. A public inquiry into the industry was held at our office in Bombay on 14th December 1960. A list of persons who attended the inquiry is given in Appendix III.

4.1. Present position :

4.1.1. Mysore Iron and Steel Works, Bhadravati, is the only producer of ferro-silicon in the country and employs one 9000 KVA and two 1500 KVA furnaces. Ferro-silicon, however, forms a minor part of its activity which embraces the production of iron and steel, spun pipes, cement, refractories, acetic acid and other products. At the time of the last inquiry (1953) the Works had two 1500 KVA furnaces at Mysore and one 9000 KVA furnace at Bhadravati. The furnaces at Mysore were not in operation and only the bigger furnace at Bhadravati was working at that time. Subsequently, the two 1500 KVA furnaces at Mysore were dismantled and re-erected at Bhadravati. One of them commenced production at the new site on

**Present position,
capacity, production
and future expansion**

1st April 1956 and the other a year later to produce ferro-alloys in general such as ferro-chrome, ferro-manganese and ferro-silicon. Later, both the 1500 KVA furnaces were, under instructions from the Iron and Steel Controller, switched over to the production mainly of ferro-silicon. At present all the three furnaces are in regular production.

4.1.2. The Works is entirely owned by the Government of Mysore. The State Government has, however, decided to convert the Works into a corporation in the public sector and steps are being taken to implement the decision. We are informed that the probable date on which the Works will be converted into a private limited or public undertaking will be 1st April 1961. The original value of the gross block including auxiliary services pertaining to the ferro-silicon section as on the 31st March 1960 was about Rs. 50 lakhs.

4.1.3. On 1st January 1960 the Works employed 28 monthly rated staff and 387 daily rated staff in the ferro-silicon plant. Besides the above staff, some senior officers attend, part-time, to the working of the plant. The basic wages of skilled labour range from Rs. 2 to Rs. 4 per day and those of unskilled labour from Re. 0.63 to Rs. 2.00 per day. These figures do not include dearness allowance, bonus, etc. The Works has entered into a five year industrial truce agreement with its workers which expires on 31st October 1961.

4.2.1. At the time of the last inquiry in 1953 though the two furnaces of 1500 KVA each at Mysore were not in operation, their combined rated capacity at 1800 tons per annum of 70-75% grade was taken into account for determining the total rated capacity of the industry. The capacity of 9000 KVA furnace at Bhadravati was assessed at 3,770 tons per annum and the total capacity for the two furnaces at Mysore and one at Bhadravati was taken as equivalent to 5,570 tons of 70-75% grade per annum. Mysore Iron and Steel Works has informed us that subsequent to the last inquiry it has not made any addition to its equipments so as to increase its rated capacity for ferro-silicon. It is, however, noticed from the statistics of production that substantially higher outputs were obtained in 1958 and 1959. These were 5,675 tons in the former year and 7,203 tons in the latter for all grades. During the period from January to November 1960, the output was 6,341 tons and at this rate the production for the whole year would approximate to 7,000 tons. Equated to 70-75% grade the production figures for 1958 and 1959 were 5,508 tons and 7,121 tons respectively and for 1960 (January-November) 6,307 tons.

4.2.2. The question of rated capacity of the existing furnaces was discussed at the public inquiry. All these furnaces have become old and require careful maintenance and periodical shut-downs for major repairs. We have, therefore, assumed that the average number of working days in a year would not exceed 303 for the 9000 KVA furnace and 320 for the two 1500 KVA furnaces. As average daily production has been obtained at the rate of about 15 tons of 70-75% grade from the bigger furnace and 6.6 tons of 70-75% grade from the two smaller furnaces together, the aggregate annual capacity of all the three furnaces in terms of 70-75% grade works to 6,657 tons. We realise that

actual production during the past two years was higher, but having regard to the condition of the plant and other aspects of the case, we consider that it would not be fair to fix the rated capacity of the Works at higher than 6,700 tons a year of 70-75% grade ferro-silicon.

4.3. *Production.*—A statement showing gradewise production of ferro-silicon from 1953 to 1960 (January-November) is given in Appendix IV. It is observed that production was rising from 1953 to 1955 but slowed down in 1956 and 1957 and again rose in subsequent years. The increase in production from 1958 appears partly due to the employment of the two 1500 KVA furnaces in the production of ferro-silicon and partly to the higher production from all the three furnaces. It is noticed that the bulk of production consisted of 70-75% grade. The Works has successfully controlled the production of powder which was less than 2 per cent in 1959 and the entire quantity was consumed in the lining of ladles and the foundry and no powder was sold outside.

4.4. *Expansion plans and new units.*—Mysore Iron and Steel Works has informed us that it has plans for expanding its capacity by 15,000 tons per annum and has placed orders for two open-type rotating 12,000 KVA Elkem furnaces. Important foundations such as buildings, columns, furnace foundations have been laid and erection work is expected to be taken up shortly. Sixty per cent of the equipment has come and the balance is either in transit or will be shipped shortly. We are informed that the commissioning of the new furnaces will depend on the availability of power from the Bhadravati Irrigation and Power Project which is under implementation and the earliest date when this power is likely to become available is about the middle of 1962. We also understand that Serajuddin & Co., Calcutta has been licensed to establish in Orissa a ferro-silicon plant with an annual capacity of 5,000 tons and that another firm has applied for the establishment of a unit also in Orissa with a production capacity of 7,200 tons of ferro-silicon per annum. We were, however, informed at the public inquiry that neither of these two units was likely to commence production by 1963. Accordingly Mysore Iron and Steel Works will continue to be the sole producer of ferro-silicon in the country for sometime to come and its annual capacity is expected to rise from the present figure of 6,700 tons to 21,700 tons by the end of 1962. Thus during the period from 1953 to 1960 the expansion of the industry has been practically nil. Capacity failed to increase in spite of an actual demand that has necessitated imports of ferro-silicon to maintain the production of steel. The reason for this lag in investment and expansion is reported to be shortage of bulk power at cheap rates and inadequate supply of charcoal and coke with low percentage of ash and low ash fusion point.

5.1. At the time of the last inquiry in 1953 we estimated the domestic demand for ferro-silicon at 4,500 tons per annum for 1954, 1955 and 1956. In connection with the present inquiry we have received various estimates of current and future demand of ferro-silicon from various sources. They are tabulated below :

Statement showing the current and future estimates of demand

(In tons)

Sl. No.	Name of the Party	As given by the Iron & Steel Controller		As given by the Development Wing		As given by the Mysore Iron & Steel Works		As given by the Consumers				
		Grade	Current 1960	Future 1963	Grade	Current 1960	Future 1963	Grade	Current 1960	Future 1962	Current 1960	Future 1963
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Tata Iron & Steel Co.	70/75%	3,600 1,000	3,600 1,000	..	..	..	3,189	4,921	..	4,000	4,500
2	Indian Iron & Steel Co.	60/70%	1,980	1,980	..	..	..	1,821	2,461	60/70% or 70/75%	1,800	1,800
3	J. K. Iron & Steel Co.	60/70%	60	120	..	..	..	49	49	75/80%	48	120
4	Bhartia Elec. Steel Co.	80/85%	130	130	..	..	..	59	59	..	..	..
5	Guest, Keen, Williams, Ltd.	60/70%	215	325	..	..	..	118	118	75/80%	160	240
6	Mysore Iron & Steel Works.	60/70%	300	600	..	..	..	374	394	..	..	..
7	National Iron & Steel Co.	75/80%	144	144	..	..	..	59	59	75/80%	144	144
8	Ordnance Factories	75/80%	472	500	..	..	..	177	276	70/75%	510 (3 factories)	510

1	2	3	4	5	6	7	8	9	10	11	12	13
9	Hindustan Steel Ltd.											
	(a) Durgapur Steel Project.	..	620	1,467	..	..	..	591	1,968	70/80% (1960-61)	526 (1960-61)	1,340 (1963-64)
	(b) Bhilai Steel Project.	..	919	1,000	..	..	..	472	1,968	70/80% (1960-61)	1,005 (1960-61)	1,600 (1963-64)
	(c) Rourkela Steel Project.	70/75%	1,500	2,000	..	..	..	354	1,870	70/80% (1960-61)	1,500 (1960-61)	2,000 (1963-64)
10	Tata Engg. & Loco. Co.	70/75%	750	1,500	..	..	..	..	..	..	..	..
11	Mukand Iron & Steel Works	65/75%	180	360	..	..	..	118	236	70/75% (Approx.)	1180 (Approx.)	360 (Approx.)
	TOTAL		11,870	14,726	..	..	..	7,381	14,379		9,873	12,614
12	Jessop & Co. Ltd.	..	..	..	..	..	..	..	..	60/70% Fesi 75	5	35 to 40
13	Burn & Co. Ltd.	..	..	..	..	..	..	..	..	75/80%	120	120
14	Richardson & Cruddas	..	..	..	..	..	..	..	..	70/75%	15	15
15	Singh Engg. Works	..	..	..	..	..	..	49	49	60/70%	48	48 to 60
16	Western Railway	..	..	..	..	..	..	177	276	60/70% (1960-61)	42 to 45 (1960-61)	42 to 45
17	Hindustan Iron & Steel Co.	..	..	..	..	..	..	49	49	70/75%	96	150
18	Small Foundries	..	..	..	..	..	..	98	404	..	..	..
19	Kumardhubi Engg. Works.	..	..	..	..	..	..	..	..	75/80%	40	50
20	Foundries	..	..	..	70/75% 60/70% 75/80%	1,500 300 50	2,800 600 150	..	..	..	..	..
	GRAND TOTAL	..	11,870	14,726	..	1,850	3,550	7,754	15,157	..	10,242	13,094

The Iron and Steel Controller has furnished estimates of requirements of main steel producers, electric furnace owners, railways and ordnance factories, which constitute the bulk of demand excluding that from iron foundries for which the Development Wing has supplied estimates. Main steel producers who are also main consumers have given estimates of their own requirements. From the total of the estimates furnished by the Iron and Steel Controller and the Development Wing it appears that the demand for 1960 is running at the rate of 13,720 tons whereas Mysore Iron and Steel Works has estimated it at 7,754 tons only. The total of the estimates of demand furnished by individual consumers comes to 10,242 tons for 1960. As regards the future, the total of estimates furnished by the Iron and Steel Controller and the Development Wing works to 18,094 tons for 1963 while Mysore Iron and Steel Works has estimated the demand for 1962 at 15,157 tons. According to the estimates furnished by individual consumers, the demand is expected to rise to 13,094 tons by 1963.

5.2. The following table gives an idea of the internal consumption of ferro-silicon for the years 1957, 1958, 1959 and 1960 (January-September) based on the consumption of indigenous ferro-silicon and imports.

	Figures in long tons			
	1957	1958	1959	1960
				(Jan.-Sept.)
Sales	5111	5378	6865	4264
Imports	18	38	689	2458
TOTAL	5129	5416	7554	6722

From the trend of internal consumption during the first nine months of 1960 it seems that the demand for 1960 may reach the figure of 9,000 tons. Many consumers who have replied to our questionnaire have complained about the non-availability or short supply of the product which indicates the existence of pent-up demand. The Iron and Steel Controller has also expressed the view that the indigenous availability was far short of the country's demand.

5.3. The various estimates were discussed at the public inquiry and it was agreed that it would not be unrealistic to estimate the demand for 1960 at 11,000 tons. As regards the future the consensus of opinion was that the demand will progressively rise to about 18,000 tons by 1963. We consider these estimates to be fairly reliable. If, however, the production of high silicon steels and special alloy steels develops on an appreciable scale, the demand for 1963 may even exceed the estimate of 18,000 tons.

5.4. It will not be out of place to mention here that the targets of production and capacity of ferro-silicon at the end of 1965-66 as envisaged in the draft outline of the Third Five Year Plan are 40,000 tons each.

6.1. The principal raw materials used in the manufacture of ferro-silicon are quartz (silica), mild steel turnings and borings and charcoal. In addition, Mysore

6. Raw materials and power

Iron and Steel Works uses consumable stores like soderberg paste and amorphous carbon for electrodes, carbon blocks and refractory silica bricks for lining and mild steel drums and gunnies for packing.

6.2. *Quartz*.—This is obtained from its own quarry at Bilikal Betta which is about 10 miles from Bhadravati. Mysore Iron and Steel Works has laid a tram line for the transport of quartz to the factory. The quarry is operated by contractors under the supervision of the Works.

6.3. *Mild steel turnings and borings*.—They are purchased mainly from railway workshops. It no longer buys scraps of steel alloy sheets from Sankey's Electrical Stampings on account of high prices.

6.4. *Charcoal*.—It is purchased from contractors and the Works pays seigniorage to the Forest Department of the State.

6.5. *Soderberg paste*.—It is at present purchased from the Alupuram plant of Indian Aluminium Company. The Works has complained against the quality of the paste as giving rise to (a) heavy spalling actions around the electrodes below contact clamps and (b) inadequate baking of electrodes by the time it reaches the burning end. We were informed at the public inquiry that these defects might be due to the use of insufficiently calcined petroleum coke or anthracite coke in the paste. We are informed that Indian Aluminium Company is examining the question of installing an Elektro Kemisk A/S electric calciner.

6.6. Both amorphous carbon and carbon block are imported while refractory silica bricks are available locally. The Works uses a small quantity of its own ferro-silicon powder for dusting ladles.

6.7. *Power*.—Adequate supply of power at economic rates is the *sine qua non* for successful operation of the ferro-silicon plant as the furnaces require between 9000 to 11000 KWH per ton of ferro-silicon produced. The plant receives electric power at its receiving station from Jog Power House at 13.2 KV.

7.1. Subsequent to the last inquiry the Indian Standards Institution has laid down a specification, IS:1110-1957 for ferro-silicon, which prescribed, *inter alia*, the composition and sizes of ferro-silicon lumps, percentage of fines and the nature of packing to be used.

7. Standard specifications and quality

7.2. Mysore Iron and Steel Works has claimed that it is following IS specification and that it has not received any complaints against the quality of its products. Most of the consumers who have replied to our questionnaire have expressed general satisfaction regarding the quality of indigenous ferro-silicon. Tata Iron and Steel Company and Mukand Iron and Steel Works have, however, complained of high percentages of fines and big lumps. The fines are not useful for electric furnaces and large sized lumps have to be broken into smaller sizes involving

expense before they can be charged into the furnace. This was discussed at the public inquiry and the representatives of the producer pointed out that the high percentage of fines must have been noticed in the grade round about 60% as ferro-silicon of this particular grade is susceptible to disintegration not only in India but in other countries also. As regards sizes, the Works has undertaken to ensure that oversize lumps are not supplied in future. We have considered the matter carefully and are satisfied from a visit to the Works and from our discussions that the quality of ferro-silicon produced by Mysore Iron and Steel Works is satisfactory and compares well, grade for grade, with the imported product.

8. The bulk of the output is sold to primary and secondary producers of steel in accordance with the six-monthly allotments of the Iron and Steel Controller. From the balance a quantity of about 400 tons is consumed by the steel plant of Mysore Iron and Steel Works and about 120 to 130 tons a year is sold by the Works direct to foundries. Only one stockist, Karnataka Agencies, Bombay gets a supply of about 60 tons for sale to foundries in and around Bombay.

9.1. We have stated in paragraph 2 that in its representation to the Government of India, Mysore Iron and Steel Works based its claim for a higher price on the ground that its manufacturing costs had increased by Rs. 81 per long ton due to the enhancement of electricity rate by the Mysore State Electricity Board. In its written memorandum to us the Works instanced a number of other items on which it has no control that have materially raised its cost of production. These are higher costs of raw materials such as m.s. turnings and borings, charcoal, increased costs of labour and establishment and higher rate of interest on borrowings from Government. It has been pointed out that the controlled price of m.s. turnings and borings has, with effect from 29th September 1956, gone up from Rs. 15 to Rs. 25 per ton. Freight charges have also been raised. The seigniorage charge on charcoal which was Rs. 2.50 per ton has progressively been increased and with effect from 1st April 1960 it has been fixed at Rs. 17.50 per ton. The Industrial Truce Agreement which was signed with the Labourers' Association in 1956 provided for higher wages and other amenities for labour. The scales of pay of staff have also been raised from the beginning of 1957. Interest on borrowings has also been fixed at the higher rate of 5 per cent with effect from 1st April 1956. The Works has represented that although all these increases took place subsequent to the last inquiry in 1953, it was able to absorb them within the prices fixed in 1953 by maintaining strict control over consumption and efficiency of operation. It has urged that the price for the future should be fixed at a higher level than warranted by the increased cost of electricity on the grounds that the Works would be converted shortly into a Corporation when it would become liable to income-tax and that it should be enabled to pay not only the tax but also to build up a reserve fund exclusively for development and

expansion of production of ferro-silicon. It will be seen from paragraph 2 that the Government of India have also asked us to take into account all factors affecting the prices including the higher rate for power for the purpose of determining the ceiling prices for the various grades of ferro-silicon produced by Mysore Iron and Steel Works.

10. We have explained in paragraph 12 of our last Report (1953) why fixation of selling prices of different grades of ferro-silicon *purely* on the basis of estimates of cost of production would not be fair to either the producer or the consumers. After taking into account the relative values of different grades (particularly inferior grades) resulting from (a) lower silicon content, (b) extra freight on larger quantity required to be used, (c) extra handling, crushing and bagging charges, and (d) extra cost of maintaining a higher temperature in the bath in view of the chilling effect of the lower grades, we recommended the prices referred to in paragraph 1 *ante*. The pattern recommended was accepted as satisfactory by both consumers and the producer and the latter has been able to sell readily its inferior grades of ferro-silicon. At the public inquiry the view unanimously expressed was that the existing pattern should be maintained in the revised prices to be recommended by us. Further, at the time of the last inquiry the output of powder silicon was considerably in excess of the requirements for self-consumption by the Works and we recommended separate price for powder of each grade. Since then the Works has been able so to control its operations that the output of powder has been small and has been consumed entirely by the Works either for dusting the ladles or in the foundry. The representatives of the unit were confident that in the future there would not be any occasion for selling powder ferro-silicon. Accordingly we do not consider it necessary to recommend separate prices for powder. The entire cost of manufacture has been distributed over the cost of production of lumps. We do not accept the claim that the new price should include an element for development and expansion of the present productive capacity as we consider that such items should be financed from either loans or fresh grants or share issues from the State Government who owns the Works. Lastly, as stated in paragraph 4.4 the Works is at present engaged in installing two furnaces with an aggregate capacity of 15,000 tons. These furnaces will be of modern rotating type and are expected to result in certain economies. We understand that the unit will withdraw the two smaller furnaces of 1500 KVA. which are less economic to operate, after the new furnaces have been commissioned. When these changes take place there will be material difference in the cost of production. As the Works claimed a higher price from 1st July 1959 we have determined fair selling prices for the whole of the year 1959-60. As for the future we have determined the fair-selling prices for the years 1960-61, 1961-62 and 1962-63 as the new furnaces are expected to be commissioned towards the end of 1962.

11. Our Cost Accounts Officer has examined the cost of production of ferro-silicon separately for the 9000 KVA furnace and the two 1500 KVA furnaces for 1959-60. His report is forwarded as a confidential enclosure to this Report. In 1949 we costed the production of ferro-

Our approach to the problem
Comparison of manufacturing costs.

silicon by the two 1500 KVA furnaces, and in 1953 by the 9000 KVA furnace only. A statement comparing the cost of production of ferro-silicon by the 1500 KVA furnaces during 1948-49 and 1959-60 and by the 9000 KVA furnace during 1952-53 and 1959-60 is given in Appendix V. Taking the cost of production by the 1500 KVA furnaces it appears that the cost of production has gone up by 34 per cent over the eleven years from 1948-49 to 1959-60 notwithstanding the fact that the Works achieved considerable economies in the consumption of raw materials, power and carbon electrodes. The rise has principally taken place in the higher cost of raw materials, power, labour and other overheads. As regards the cost of production from the 9000 KVA furnace, significant increases have taken place under raw materials. Percentages of recovery of silicon from quartz and iron from scrap were lower in 1959-60 than in 1952-53 and consumption of charcoal was higher. Although the Works achieved some economy in the consumption of power, it was more than off-set by the higher rates imposed with effect from 1st July 1959 by the Mysore State Electricity Board and the actual cost of power went up from Rs. 170·41 in 1952-53 to Rs. 254·03 in 1959-60. The economies under repairs, maintenance and consumable stores, other overheads and packing were all off-set by the increases under raw materials and power. The result was that the cost of production went up from Rs. 693 during 1952-53 to Rs. 768 during 1959-60.

12.1. *Actual cost of production during July 1959—March 1960.*—As stated in paragraph 2, Mysore Iron and Steel Works has asked for enhanced prices from 1st July 1959. The data

12. **Cost of production** relating to the actual cost of production for the entire year 1959-60 collected by our Cost Accounts Officer have been examined by us and suitably amended for the higher rate of power in order to arrive at the actual cost of production for the period from July 1959 to March 1960. As the unit (being State-owned) is not liable to income-tax, profit for this period has been allowed at 6 per cent on the capital employed, the element of working capital included therein being equivalent to five months' cost of production excluding depreciation. On this basis the fair ex-works selling price of ferro-silicon of 70/75% grade comes to as follows:—

	9000 KVA furnace	1500 KVA furnaces
	Rs. per ton	Rs. per ton
Total works cost of production <i>vide</i> the table in Appendix V	768·16	932·70
Adjustment on account of increase in the rate of electricity since 1st July 1959 over the weighted average for the full year 1959-60	23·25	28·55
Adjusted total works cost	791·41	961·25
Profit at 6 per cent on capital employed	45·32	52·41
Fair ex-works selling price	836·73	1013·66
Say Rs.	837	Rs. 1014

Consumption of raw materials and power was higher in the smaller furnaces and labour and establishment charges were almost double of those in the case of the bigger furnace. It is uneconomical to employ the smaller furnaces on ferro-silicon but in view of the existing volume of unsatisfied demand from consumer industries and the present foreign exchange position, Government have no option but to press them into service.

12.2. *Future cost of production.*—On the basis of the data collected for actual cost of production, we have framed estimates for the future (1960-61, 1961-62 and 1962-63). We have taken note of such factors as are beyond the control of Mysore Iron and Steel Works such as higher costs of raw materials, power and transport charges. The other factors which have been taken into account in estimating the works cost for future are stated below.

12.2.2. *Production.*—We have assumed that the bigger furnace (9000 KVA) will operate for 303 days and the two smaller furnaces for 320 days each in a year and that their pattern of production will follow the average trend during the preceding two years (1958-59 and 1959-60). On this basis the annual output will be as follows:—

Grade	9000 KVA furnace	1500 KVA furnaces
	Tons	Tons
75—80%	227	108
70—75%	3545	1678
60—70%	682	323
50—60%	91	43
Total	4545	2152

12.2.3. *Raw materials:*

12.2.3.1. *Quartz and scrap.*—The recovery of silica from quartz and of iron from scrap was lower in 1959-60 than in the earlier period 1952-53. The fall in recovery of iron is attributed by the representatives of the unit to the inferior grades of scrap available. It was represented that shortages of Railway wagons involved longer periods of storage exposed to atmosphere resulting in the rusting of scrap. Nevertheless, we consider that some improvement in the recovery percentages is possible and in consultation with the representatives of the unit we have adopted the following recovery efficiencies in the bigger furnace :

Quartz	92.5 per cent
Scrap	70 per cent

In the case of smaller furnaces suitable adjustments have been made for their lower efficiency.

12.2.3.2. *Charcoal*.—On the basis of 70 per cent carbon content the quantities of charcoal required per ton of ferro-silicon have been worked out for both the bigger and the smaller furnaces. Since the bulk of supply will come from the Sharavati valley which will be more expensive suitable adjustments in the cost have been made.

12.2.3.3. *Power*.—Consumption per ton of 70/75% grade of ferro-silicon has been taken at 9000 KWH in the case of the bigger furnace and 11000 KWH in the case of the smaller furnaces against actual consumption of 9237 KWH and 11339 KWH respectively during 1959-60. We understand that the lower power consumption figures accepted by us are more in line with those obtained in similar furnaces in overseas countries. These were also attained by Mysore Iron and Steel Works during the first six months of 1960. *Prima facie*, therefore, there is no reason why it should not be able to maintain such lower power consumption in future by adopting suitable production programme and by improving other operational efficiencies. The rate of power has been taken at nP. 3.00 per KWH in the case of bigger furnace and nP. 2.75 in the case of latter. The cost of power per ton of ferro-silicon of 70/75% grade from the bigger furnace works to Rs. 270.00 as against the actual cost of Rs. 254.03 during 1959-60, when the average rate of power was nP. 2.75 per KWH.

12.2.3.4. *Labour and establishment, overheads, and selling expenses*.—The estimates for the future provide for normal annual increments and also take into account the dearness allowance which has been increased by Rs. 5 per month from 1st January 1960 and the production bonus.

12.2.3.5. *Repairs, maintenance and consumable stores*.—In addition to the provision of normal annual increments for the element of labour and establishment included under these heads, an increased provision of 5 per cent on account of stores on the total expenditure of 1959-60 has been included in the estimates to take care of the probable rise in the level of prices, etc.

12.2.3.6. *Furnace relining charges*.—The bigger furnace requires to be relined every three years. The total estimated expenditure has been treated as deferred revenue expenditure and charged to production each year 1/3rd of the total.

12.2.3.7. *Depreciation*.—Depreciation has been calculated on the written-down values in so far as the specific block of the ferro-silicon plant is concerned. As regards auxiliary services, we have accepted the figures furnished by the Works.

12.2.3.8. *Packing*.—The Works uses exclusively second-hand steel barrels (oil or tar drums). These barrels are purchased from the Public Works Department of the State Government at Rs. 3.50 per barrel ex-site. The Works has, however, received advice to the effect that prices of barrels would be raised to Rs. 7.00 a piece. We have made provision for this higher rate in our estimates.

12.2.3.9. *Contingencies*.—We have stated in paragraph 9.1 that the Works entered into a five-year Industrial Truce Agreement with the Labourers' Association in 1956. This Agreement is due to expire on 31st October 1961 and thereafter a fresh agreement may have to be negotiated with the workers. Special Committees have also been set up by the State Government to go into the question of pay of Government officials and the new scales of pay, if any, which may be recommended by them and accepted by Government will also be applicable to the officers and staff of the Works. The incidence of these measures cannot be foreseen at present but we consider it reasonable to allow a uniform margin of Rs. 10.00 per ton for all grades. This should cover all establishment and labour charges not covered by the allowance given in paragraph 12.2.3.4.

12.2.3.10. *Return*.—As stated in paragraph 4.1.2 the Works is likely to be converted into a public corporation with effect from 1st April 1961, when it will become liable to income-tax. This liability will therefore be effective for a period of two years out of the three for which we have framed our price estimates. We have allowed an average return of 8 per cent on capital employed. The net profit which this unit will earn on this basis will, after payment of income-tax, be sufficient to meet its commitments under bonus and gratuity and interest on borrowings from Government and even after payment of a moderate dividend on the Works becoming a company leave a residue for building up reserves.

12.3. The final figures of the cost of production of 70/75% grade ferro-silicon are as follows:—

Grade Production in tons.—	9000 KVA furnace	1500 KVA furnaces
	70/75%	70/75%
(a) All grades	4545	2152
(b) Equated to 70/75%	4457	2110

	Rs.	Rs.
1. Total Material cost	214.07	245.43
2. Power & Fuel:— (a) Electricity	270.00	302.50
(b) Electrode Paste and Casings	65.13	—
Electrodes and nipples	—	132.41
3. Labour and Establishment	62.82	122.28
4. Consumable Stores and Repairs and Maintenance and ferro-silicon for ladle lining for 9000 KVA furnace	70.41	40.28
5. Depreciation	18.28	19.67
6. Other overheads	52.50	69.67
7. Furnace relining charges	17.73	9.95
8. Selling expenses	6.99	6.99
9. Packing charges	40.15	40.15
10. Total cost of production	818.08	989.33

12.4. A comparison of the cost of production of ferro-silicon by the 9000 KVA furnace during the 9 months ended 31st March 1960 with the estimates of cost of production for future shows that increases have taken place mainly under raw materials, labour, stores and packing. The increase under raw materials is attributable to the increase in the rate of charcoal assumed for future even though the consumption per unit of output has been reduced. Increases under labour and stores are accounted for by the fact that in respect of labour and establishment, annual normal increment at 4% per annum and in respect of stores an overall increase of 5% have been admitted. The substantial increase under packing is due to the high cost of steel barrels assumed in the estimates:

A similar comparison of the cost of production by the 1500 KVA furnaces discloses a reduction of Rs. 8 under raw materials mainly due to assumption of reduced consumption of charcoal which more than offsets the increase in the rates. The other substantial increases are under the heads "labour", "packing", "furnace relining" and "overheads". The increased cost of packing is due to the higher cost of barrels referred to in connection with the cost of production by the 9000 KVA furnace. The furnace relining charges are a new item. During the past four years, the company did not incur any expenditure on this account and hence there was no charge under this head during the actual period. In the estimates for future a provision has been made to take care of expenditure that is likely to arise in future. The increases under other heads are generally attributable to the fact that production from this furnace has been taken at 2110 tons (equated to 70-75%) as against a corresponding figure of 2213 tons in 1959-60. The reduction of about 5% in output has tended to inflate the incidence of unit cost in so far as the fixed operating charges of this furnace are concerned. The weighted average works cost of production (excluding profit) for the nine months ended 31st March 1960 worked out to Rs. 838.23 as against Rs. 859.71 for future. Thus it will be seen that on an average the increase has been only of the order of about Rs. 22.00.

13. Although the standard practice in fixing fair selling prices is to relate them to the estimated fair ex-works prices, we made a departure in the case of ferro-silicon for the reasons stated in paragraph 12 of our Report (1953) and which have been briefly indicated in paragraph 10. There was complete unanimity at the public inquiry that the pattern of prices developed in 1953 has been satisfactory to both the producer and the consumers and should not be disturbed. This would, to a certain extent, reduce the disadvantage of extra freight to consumers of poorer grades of ferro-silicon and encourage their consumption. On the basis of index numbers for existing selling prices we have worked out the prices of the several grades of ferro-silicon not only for the period from 1st July 1959 to 31st March 1960 but also for the three-yearly period 1960-61, 1961-62 and 1962-63. They are given below :—

Grade	Price for the period from 1st July 1959 to 31st March 1960	Price from 1st April 1960
	Rs.	Rs.
75/80%	983·94	1039·77
70/75%	906·58	958·30
60/70%	733·04	775·26
50/60%	608·10	642·99

We recommend, therefore, that the following prices should be fixed as the ceiling prices, F.O.R. Bhadravati, of the above grades of ferro-silicon produced by Mysore Iron and Steel Works :—

Grade	Price for the period 1-7-1959 to 31-3-60		Price from 1-4-1960	
	Rs. per long ton	Rs. per metric tonne	Rs. per long ton	Rs. per metric tonne
1	2	3	4	5
75/80%	984	968	1040	1024
70/75%	907	893	958	943
60/70%	733	721	775	763
50/60%	608	598	643	633

We also recommend that the Works be permitted to recover from its customers the difference between the prices given in column 2 of the above table and the prices (including deposits of Rs. 81.00 per ton) at which supplies were made during the period from 1st July 1959 to 31st March 1960. As regards supplies from 1st April 1960, the Works should recover the difference between the prices in column 3 of the table and the prices (including deposits of Rs. 81.00 per ton) at which supplies have already been made. For supplies in the future, the prices indicated in column 3 will be applicable till the next review takes place in early 1963.

14. The prices recommended by us are higher for every grade than the current prices. Over-all they are higher by about Rs. 85.00 per ton for the period from 1st July 1959 to 31st March 1960 and by a further Rs. 51.00 per ton for the future. Out of the over-all increase of Rs. 136.00 per ton, the greater part is accounted for by the upward revision of charges by the State

**Effect of new prices
on the customer**

Government on electricity and supply of second-hand barrels for packing. The rest is due to the inevitable increases on account of increments to establishment and labour and contingency provision for rise in prices of stores and spares. We are informed that the effect of these increases in the price of ordinary mild steel is negligible. A rise of Rs. 100.00 per ton in the price of ferro-silicon is reflected in raising the cost of production of special steel of dynamo grade by Rs. 5.00 per ton and of transformer grade by about Rs. 16.00 per ton. These rises are of little consequence considering the fact that their present selling prices are about Rs. 1150 per ton for the dynamo grade and about Rs. 1600 per ton for the transformer grade silicon sheets.

15.1. *Rates of electricity.*—Ferro-silicon is a power intensive industry

inasmuch as it requires between 9000 and 11000 KWH to produce one ton of ferro-silicon of 70/75% grade. The cost of power, therefore, is a major element and an increase of nP. 1.00 per KWH inflates the cost of ferro-silicon by Rs. 90 to Rs. 110 per ton. Indeed, power charges during 1959-60 accounted for 33 per cent. of the cost of production and whatever economies the Works were able to achieve in consumption were more than off-set by the higher charges of electricity. Ferro-silicon is widely used in metallurgy for finishing carbon steel and for producing alloy-steels with special mechanical and physical properties. Production of steel, which is the most vital industrial material, is expected to rise from 2.6 million tons in 1960-61 to 6.9 million tons in 1965-66. Ferro-silicon will thus be required in ever increasing quantities. We have stated in paragraph 4.4 that shortage of bulk power at cheap rates has held up further development of this industry notwithstanding the fact that actual demand has been in excess of supplies. We have stated in paragraph 18.3.2 of our last Report (1960) on the continuance of protection to the Aluminium Industry that it is essential to maintain power rates stable for a fairly long period and to supply adequate power to meet the growing needs of that industry at reasonable rates. Those considerations apply equally to the ferro-silicon industry and we recommend that the attention of State Electricity Boards should be drawn to the above observations and that they should be requested to give sympathetic consideration to requests from the ferro-silicon industry for bulk supply of power at cheap rates.

15.2. *Charcoal.*—Mysore Iron and Steel Works uses charcoal for reduction of silica in quartz in the electric furnace and its present consumption is of the order of 7,000 tons a year. It also proposes to use this material in the bigger furnaces which will be installed in the near future and when this will take place its consumption may go up to about 22,000 tons a year. Use of charcoal at this rate will involve large-scale depletion of our forest wealth and although the representatives of Mysore Iron and Steel Works assured us that the Government of Mysore were alive to the need for early replenishment of forest wealth and have taken adequate steps to place new areas under quick growing trees, we are apprehensive that such regeneration is unlikely to catch up with the large-scale depletion that is bound to take place unless charcoal is

substituted at least partially by some other material. We are fortified in this view by what we saw during our visits to forest areas in the South in connection with our inquiries into the raw rubber industry, tea-chest and plywood industry and paper industry. We are informed that in Norway and other countries coke of suitable quality is generally used as the reduction medium and the use of charcoal is limited only to the manufacture of high grade ferro-silicon of 90% and above. The specifications required are that coke must be low in ash content and should have low ash fusion point. We suggest that Mysore Iron and Steel Works should take urgent steps to locate indigenous sources of supply of such coke and also explore the possibility of using it for a part of its requirements. We recommend that in this endeavour the Ministry of Steel, Mines and Fuel should afford them all necessary assistance.

16. Our conclusions and recommendations are summarised below :

Summary of conclusions and recommendations

16.1. The production of ferro-silicon of all grades was 5,675 tons during 1958, 7,203 tons during 1959 and 6,341 tons during January-November, 1960.

[Paragraph 4.2.1]

16.2. The present aggregate annual capacity of all the three furnaces in terms of 70-75% grade ferro-silicon of the Works is estimated at 6,700 tons and it is expected to rise to 21,700 tons by the end of 1962.

[Paragraphs 4.2.2. and 4.4]

16.3. The current annual domestic demand for ferro-silicon is estimated at 11,000 tons and it will progressively rise to about 18,000 tons by 1963.

[Paragraph 5.3]

16.4. Quality of indigenous ferro-silicon is satisfactory and compares well, grade for grade, with the imported product.

[Paragraph 7.2]

16.5. We recommend that ceiling prices for different grades of ferro-silicon produced by Mysore Iron and Steel Works should be fixed as given in paragraph 13 of the Report.

[Paragraph 13]

16.6. We also recommend that the Works be permitted to recover from its customers the difference between the prices given in column 2 of the table in paragraph 13 and the prices (including deposits of Rs. 81 per ton) at which supplies were made during the period from 1st July 1959 to 31st March 1960. As regards supplies from 1st April 1960, the

Works should recover the difference between the prices in column 3 of the table and prices (including deposits of Rs. 81 per ton) at which supplies have already been made. For supplies in the future, the prices indicated in column 3 will be applicable till the next review takes place in early 1963.

[Paragraph 13]

16.7. We recommend that the attention of State Electricity Boards should be drawn to our observations made in paragraph 18.3.2. of our Report (1960) on Aluminium industry and that they should be requested to give sympathetic consideration to requests from the ferro-silicon industry for bulk supply of power at cheap rates.

[Paragraph 15.1]

16.8. Mysore Iron and Steel Works should take urgent steps to locate indigenous sources of supply of coke with low ash content and low ash fusion point and explore the possibility of using it for a part of its requirements. We recommend that in this endeavour the Ministry of Steel, Mines & Fuel should afford the Works all necessary assistance.

[Paragraph 15.2]

17. We wish to express our thanks to the representatives of the manufacturer, consumers and others who furnished us with valuable information and tendered evidence before us. Our thanks are also due to Mr. S. Gylseth, Representative in India for Norwegian Industries, who attended the public inquiry on our invitation.

Acknowledgements

सत्यमेव जयते K. R. P. AIYANGAR,

Chairman.

S. K. MURANJAN,

Member.

J. N. DUTTA,

Member.

B. R. SEHGAL,

Secretary.

BOMBAY,

Dated 13th January, 1961.

APPENDIX I
(Vide Paragraph 2)

GOVERNMENT OF INDIA

MINISTRY OF COMMERCE AND INDUSTRY

No.63(6)-T.R./59.

the 9th January, 1960.
NEW DELHI, 19th Pausa, 1881.

FROM

SHRI K. C. MADAPPA, I.A.S.,

DEPUTY SECRETARY TO THE GOVT. OF INDIA.

TO

THE SECRETARY,
TARIFF COMMISSION,
BOMBAY-1.

SUBJECT:—*Enhancement of selling prices of ferro-silicon—Request from the Mysore Iron and Steel Works—*

Sir,

I am directed to refer to Government's Resolution No. 17(1)-T.B./53, dated the 28th November, 1953, wherein Government had *inter alia* accepted certain recommendations of the Tariff Commission regarding ceiling prices for ferro-silicon of different grades produced by the Mysore Iron and Steel Works, Bhadravati.

2. The Mysore Iron and Steel Works, Bhadravati, have recently represented that their manufacturing costs have increased by Rs. 81.00 per ton due to the enhancement of the rate charged for power by the Mysore State Electricity Board, and they have accordingly requested that the ceiling prices referred to above may be increased correspondingly. A copy of their letter No. A/Cost/DR/3824 dated the 26th August, 1959 (with enclosure) is attached for your information in this connection.

3. As the demand for ferro-silicon in the country is very much more than the internal production, the ceiling prices fixed by Government in 1953 on the recommendation of the Tariff Commission in its Report (1953) on the continuance of protection to the Ferro-Silicon Industry are in effect the actual selling prices for the higher grades at least. The Tariff Commission is requested, under section 12(d) of the Tariff Commission Act, 1951, to examine the claim of the Mysore Iron and Steel Works for higher prices, taking into account all factors affecting the prices, including the higher rate for power referred to above, and to report on the ceiling prices to be fixed for the various grades of ferro-silicon produced by the Mysore Iron and Steel Works, Bhadravati. While recommending the ceiling prices, the Commission will, no doubt, take into account the surcharge of Rs. 81.00 per ton of ferro-silicon of all grades, which the Mysore Iron and Steel Works have been obtaining in deposit from their customers with effect from the 1st July, 1959.

Yours faithfully,

(Sd) K. C. MADAPPA,

Deputy Secretary to the Government of India.

**THE MYSORE IRON AND STEEL WORKS
BHADRAVATI**

Ref. No. A/Cost/DR/3824.

26th August, 1959.

THE SECRETARY TO THE GOVT. OF INDIA, MINISTRY OF STEEL, MINES AND FUEL,
DEPARTMENT OF IRON AND STEEL, UDYOG BHAVAN, KING EDWARD ROAD,
NEW DELHI.

DEAR SIR,

Sub:—*Enhancement of selling prices of Ferro-silicon manufactured by the Mysore Iron and Steel Works.*

We invite your kind reference to the Government of India Resolution No. 17(8) TB/49, dated 31-12-1949 and Resolution No. 17(1)-TB/53, dated 28-11-1953 fixing the ceiling prices of ferro-silicon of different grades.

The Tariff Board admitted the consumption of power per ton of ferro-silicon in respect of 1500 KVA furnace at 11,690 units per ton based on the estimated annual production of 2010 tons as per their 1949 report, and, the Tariff Commission in their 1953 report for 9000 KVA Furnace, have admitted consumption of power per ton of ferro-silicon at 9,900 units based on an annual production of 3,981 tons. The average consumption of power works out to 10,500 units per ton of ferro-silicon. The rate adopted in the estimates by the Tariff Commission is 1.732 nP. per unit (including tax).

The Mysore State Electricity Board have increased power rates with effect from 1-7-1959. According to the revised tariff of the Mysore State Electricity Board, the rate of power supplied to the Ferro-silicon plant is at 2.480 nP. per unit (including taxes etc.). The incidence of extra increase on the cost of production of ferro-silicon on the basis of the revised tariff rate works out to Rs. 78.54 per ton. As the revised tariff is based on power factor/demand factor/etc., there will be variations to the extent of 1% in the power rate of 2.480 nP. per unit as stated above. We, therefore, request that the existing selling prices may be enhanced by Rs. 81.00 per ton of ferro-silicon for all grades with effect from 1-7-1959. A detailed working sheet is enclosed for information.

As the matter was urgent, we have intimated our customers that we would be billing them at the higher rates proposed with effect from 1-7-1959, in anticipation of sanction of Government. This procedure is adopted, as there would be no scope to recover the enhanced rate at a later stage.

Yours faithfully,

for the Mysore Iron & Steel Works,

(Sd) M. D. SHIVANANJAPPA,

Director and Vice-Chairman.

THE MYSORE IRON & STEEL WORKS, BHADRAVATI.

Statement showing the power consumption estimated by the Tariff Commission.

Tariff Board Report of 1949 on the continuance of protection to the Ferro-silicon Industry and Resolution No. 17(8)-T.B./49, dated 31-12-1949.

Rate per unit of power as per Revised Tariff of the Mysore State Electricity Board—2.480 nP. per unit.

Annual production 2010 tons or 168 tons per month (daily output of different grades has been taken as for 1948-49).

The cost of power per ton of Ferro-Silicon as per revised rate of 2.480 nP. on the average power consumption.

2.480 nP. \times 10500 units = Rs. 260.40 per unit.

1500 Power consumption admitted 11/690 per ton KVA

Furnace. $168 \times 11690 = 19,63,920$ units.

Tariff Commission Report of 1953 on the continuance of protection to the Ferro-silicon Industry and Resolution No.17(1) T.B./53, dated 28-11-1953.

The cost of power per ton of ferro-silicon as per the rate adopted by the Tariff Commission in their Report of 1953.

1.732 nP. \times 10500 units	=	181.86
per unit.		
Increase		<u>78.54</u>

Annual production 3981 tons or 332 tons per month. Power consumption admitted 9900 per ton. 9000 KVA.

furnace $332 \times 9900 =$ II 32,86,800 units
52,50,720 units.

ADD One percent variation as the revised Tariff is based on Power factor etc.

Total power consumption per month :
I and II. 52,50,720 units.

2.52

Average power consumption per ton of Ferro-Silicon. 52,50,720 units

81.06

OR Rs.

81

500

332 tons 9000 KVA

168 tons 1500 KVA 2 Furnaces.

500 tons =

10,500 units.

(Sd)

Chief Accounts Officer.

APPENDIX II

(Vide Paragraph 3.1)

List of parties to whom the Commission's questionnaires/letters were issued and from whom replies or memoranda were received

* Indicates those who have replied.

PRODUCER:

- *1. Mysore Iron and Steel Works, Bhadravati (Mysore State).

CONSUMERS:

- *1. The Controller of Stores, Western Railway, Central Office, Churchgate, Bombay-1.
- *2. Burn & Co. Ltd., Howrah Iron Works, Howrah, West Bengal.
- *3. Cooper Engineering Ltd., Satara Road, Satara District.
- *4. Director General of Ordnance Factories, 6, Esplanade East, Calcutta-1.
- *5. Indian Malleable Castings Ltd., 4, Lyons Range, Calcutta.
- *6. Jamshedpur Engineering and Machine Mfg. Co. Ltd., Tatanagar.
- *7. Jessop and Co. Ltd. 63, Netaji Subhas Road, Calcutta-1.
- *8. J. K. Iron and Steel Co. Ltd., Kamla Tower, Kanpur.
- *9. Kirloskar Brothers Ltd., Kirloskarvadi, Satara District.
- *10. Kumardhubi Engineering Works Ltd., P.O. Kumardhubi, Manbhum District.
- *11. Mukand Iron and Steel Works Ltd., Bombay Agra Road, Kurla, Bombay.
- *12. The National Iron and Steel Co. Ltd., Stephen House, 4, Dalhousie Square, Calcutta.
- *13. Richardson and Cruddas, Byculla Iron Works, Bombay.
- *14. The Indian Iron and Steel Co. Ltd., 12, Misson Row, Calcutta.
- *15. The Tata Iron and Steel Co. Ltd., 24, Bruce Street, P.O. Box No. 378, Fort, Bombay.
- 16. Texmaco (Gwalior) Ltd., P. O. Birlanagar, Gwalior.
- 17. Krishna Steel Industries Ltd., 301, Masjid Bunder Road, Bombay.
- *18. The Controller of Stores, Central Railway, Administrative Office, V.T., Bombay.
- 19. Bhartia Electric Steel Co. Ltd., 42, Shibtolla Street, Calcutta-7.
- *20. Hindustan Iron & Steel Co., 8, Rajendra Deb Road, Calcutta.
- *21. Singh Engineering Works Private Ltd., Post Box No. 66, G. T. Road, Kanpur.
- *22. Hindustan Steel Ltd., 7, Wellesley Place, 2nd Floor, Calcutta.
- 23. Steel Rolling Mills of Hindustan (P) Ltd., 135, Canning Street, Calcutta.
- *24. G. K. W. Ltd., 41, Chowringhee Road, Calcutta.

- *25. Tata Locomotive & Engg. Co. Ltd., Bombay House, 24, Bruce St., Fort Bombay.

CONSUMERS' ASSOCIATION :

Steel Re-rolling Mills' Association of India, 20, Strand Road, Calcutta.

RAW MATERIAL SUPPLIER:

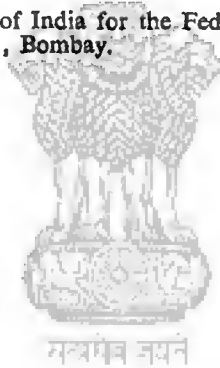
- *The Indian Aluminium Co., Ltd., 31, Chowringhee Road, Calcutta-16.

GOVERNMENT DEPARTMENTS :

- *1. Iron and Steel Controller, Netaji Subhas Road, Calcutta.
- *2. The State Trading Corporation of India Ltd., Express Building, 9/10 Mathura Road, New Delhi.
- *3. The Senior Industrial Adviser, Development Wing, Ministry of Commerce & Industry, Udyog Bhavan, Maulana Azad Road, New Delhi.
- *4. The First Secretary (Commercial) to the Embassy of India, No. 1, Colbjørnsens Gate, OSLO (Norway).

OTHERS :

- *The Representative of India for the Federation of Norwegian Industries Post Box No. 871, Bombay.



APPENDIX III

(Vide Paragraph 3·3)

List of persons who attended the public inquiry on 14th Dec. 1960

Sl.No.	Name of person	Representing
(A) PRODUCERS :		
1	Shri M.D. Shivananjappa	} Mysore Iron and Steel Works, Bhadravati (Mysore State).
2	„ B. S. Sharma	
3	„ R.G. Karihanumiah	
4	„ G. Muniswamy	
5	„ N.M. Channabashviah	
6	„ M.R. Narasimha Murthy	
(B) CONSUMERS :		
7	Shri A.P. Ataide	The Controller of Stores, Western Railway, General Office, Churchgate, Bombay-1.
8	Shri Biswas	} Mukand Iron and Steel Works Ltd., Bombay Agre Road, Kurla, Bombay.
9	„ Vinod Shah	
10	„ Narayan	
11	Shri S. N. Sircar	} The Tata Iron and Steel Co. Ltd. 24, Bruce Street, P. O. Box No. 378, Fort, Bombay.
12	„ S. R. Subbaraman	
(C) GOVERNMENT DEPARTMENTS :		
13	Ltd. Col. O. G. Eapen	Iron and Steel Controller Netaji Subhas Road, Calcutta.
14	Shri Srivastava	The State Trading Corporation of India Ltd., Express Building, 9/10, Mathura Road, New Delhi.
(D) OTHERS :		
15	Mr. S. Gylseth.	} The Representative in India of Norwegian Industries, 14, Netaji Subhas Road, Calcutta-1.
16	„ K. W. Christensen	

APPENDIX IV

(Vide Paragraph 4.3)

Statement showing production of different grades of ferro-silicon for the years
1953 to 1960 (Jan.-Nov.)

(Figures in long tons.)

Year	Furnace	Below 50%																Total Pro- duction	
		Tons	%	Tons	%	Tons	%	Tons	%	Tons	%	Tons	%	Tons	%	Tons	%	Tons	%
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
1953	9000 KVA	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3,808	100
1954	9000 KVA	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4,417	100
1955	9000 KVA	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5,184	100
1956	9000 KVA	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4,523	100
1957	9000 KVA	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4,362	100
	1500 KVA II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	259	100
	TOTAL	198	4.28	157	3.40	1,571	34.00	2,120	45.88	494	10.69	81	1.75	4,621	100				
1958	9000 KVA	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4,712	100
	1500 KVA I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	174	100
	1500 KVA II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	789	100
	TOTAL	41	0.72	155	2.73	1,307	23.03	3,630	63.97	533	9.39	9	0.16	5,675	100				

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1959	9000 KVA	.	.	.	.	53	1.02	530	10.24	4,192	80.99			5,176	100
	1500 KVA I	.	.	.	.	18	1.79	140	13.92	840	83.50			1,006	100
	1500 KVA II	.	.	.	.	14	1.37	127	12.44	869	85.11			1,021	100
	TOTAL	.	.	.	.	85	1.18	797	11.07	5,901	81.92			7,203	100
1960	9000 KVA	.	.	.	.	5	0.11	11	0.25	313	6.98	3,758	83.81	4,484	100
(Jan.-	1500 KVA I	.	.	.	.	1	0.10	3	0.31	111	11.64	804	84.28	954	100
Nov.)	1500 KVA II	.	.	.	.			2	0.22	121	13.40	774	85.72	903	100
	TOTAL	.	.	.	.	6	0.09	16	0.25	545	8.60	5,336	84.15	6,341	100

APPENDIX V
(Vide Paragraph 11)

THE MYSORE IRON & STEEL WORKS, BHADRAVATI.
Statement showing the comparison of cost of 70-75% Grade per ton of Ferro-silicon
9000 KVA Furnace & 1500 KVA Furnaces

(Rs. per ton)

Period Production in tons (All grades)	9000 KVA Furnace		1500 KVA Furnaces	
	Actuals (1952-53)	Actuals (1959-60)	Actuals (1948-49)	Actuals (1959-60)
	1747.7	4538	2010	2244
	Rs.	Rs.	Rs.	Rs.
1. Material Cost	169.57	208.62	225.00	253.47
2. Power & Fuel	241.62	318.51	274.30	431.47
3. Other Conversion Charges	243.44	215.21	152.46	221.94
4. Selling & Packing	38.18	25.82	44.25	25.82
TOTAL COST OF PRODUCTION	692.81	768.16	696.01	932.70

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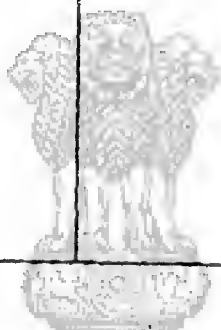
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